

Name: _____

Final Exam
December 22, 2004

Answer all questions on these exam sheets, using the last page of the exam if you need more space. The three questions are of approximately equal weight. Look ahead and budget your time accordingly.

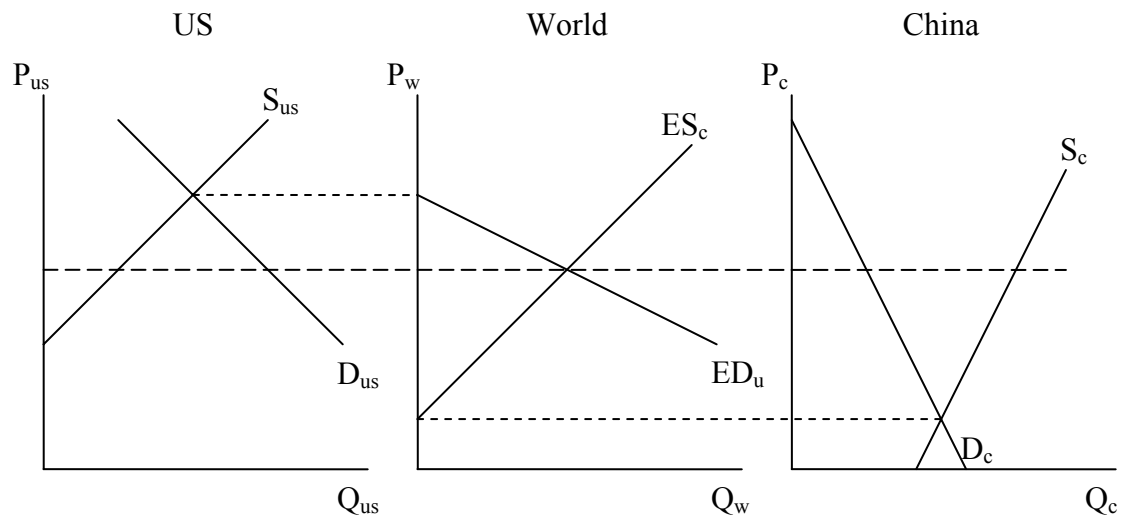
1. Population growth has pretty much stopped in much of the rich world, but it continues in much (though not all) of the developing world. There is of course a lot more going on than just that, but for this question you should ignore such things as technological progress and capital accumulation, and just focus on the effects of population growth in the poorer parts of the world. That is, you will use the two main general-equilibrium, two-country models of trade theory to work out the effects of population growth in one of the countries on real wages of labor in those countries. In each case, use whatever tools of analysis you find appropriate to demonstrate your results.
 - a. First, use the Ricardian Model of two countries that, in their initial equilibrium, are both specialized into producing only one of the two goods. Call the countries North and South, with North specializing in good X and South specializing in good Y. Then suppose that population increases in South. Work out what will happen to equilibrium relative prices of the two goods and also to the real wages of labor in the two countries.

- b. Now use the Heckscher-Ohlin model, together with the Standard Trade Model, with both countries producing both goods in all equilibria, and with South having a relative abundance of labor, even initially. Show the effects, as before, of an increased population in South on equilibrium relative prices and on the real returns to labor in both countries. (You can ignore the effects on the real return to the other factor – call it land.)

1.b. (continued)

2. As you know, the U.S. has quotas on imports of textiles and apparel from China (as well as from other developing countries) that are due to expire a few days from now. In response to that fact, U.S. producers have requested that the U.S. protect them, after the quotas are gone, by placing a tariff on imports from China. China, in turn, has now announced that it will tax exports itself. In this question I would like you to analyze the likely effects of these three policy changes on the U.S., on China, and on other countries. Each part of the question says explicitly what you should do. In all of them except the last, I will assume that only a single product is at issue and call it apparel.
- a. To begin, suppose that the world consists only of the U.S. and China, that the apparel industry is a small enough part of these countries' economies that it can be analyzed in partial equilibrium, and that the U.S. and China are both large enough for their policies to affect prices in the other. In that context, analyze the effects in both economies of removing a U.S. import quota on apparel, assuming that the rights to import under the quota were allocated to the Chinese government.

To get you started, in the graph below the center panel shows a free trade equilibrium in the world market for traded apparel, where the supply curve is the excess supply from China whose domestic supply and demand are shown on the right, and the demand curve is the excess demand of the US whose domestic supply and demand are shown on the left.



- i. In the figure, show what the equilibrium must look like in the presence of a US import quota equal to one-half the free-trade level of imports.
- ii. Using what you found in part (i), determine what the effects of **removing** this quota would be if there were no other policy replacing it, thus moving to free

trade. Record your answers in the table below, putting check marks in the appropriate columns.

Effects of Removing the Quota:	Rise	Fall	No change	Ambi- guous
Price in US				
Price in China				
Supply in US				
Demand in US				
Supply in China				
Demand in China				
Trade				
Welfare of US suppliers				
Welfare of US demanders				
Welfare of Chinese suppliers				
Welfare of Chinese demanders				
Welfare of US as a whole				
Welfare of China as a whole				

Most of your answers should be self-explanatory from the figure, if you did it right. But the effects on welfare of the US as a whole and of China as a whole require some explanation. Provide that in the space below:

- b. Suppose now that the U.S. replaces the quota with a tariff that leaves US domestic apparel suppliers exactly as well off as they were with the quota. Describe, in the space below, how the new equilibrium differs from the equilibrium before the quota was removed. Who, now, gains and loses from the move from the quota to the tariff?
- c. Now suppose that, instead of the U.S. replacing the quota with a tariff, China replaces the quota with an export tax that, like the tariff in part b, would leave US suppliers exactly as well off as under the quota. What now will be the effects of moving from the quota to China's export tax?

(Use this space to continue your answer to question 3.)

(Use this space, if you need it, to continue your answer to question 3.)

(Use this space to continue your answers to any questions for which I didn't leave enough room. Be sure to mark clearly what question, and what part of it, you are answering.)